REMARKS/ARGUMENTS

Claims 1 and 24 are hereby amended and claim 3 is canceled, thereby leaving claims 6, 7, 9-12 and 14-23 unchanged. Claims 2, 4, 5, 8 and 13 were previously canceled. No new matter is added. The Applicant thanks the Examiner for the indication that claim 22 contains allowable subject matter.

Claims 1, 3, 6, 7, 9-12, 14-17 and 19-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cobb et al. (US 5,054,954).

Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Cobb et al. in view of Anderson (US 2003/0086761).

Claims 1 and 24 define a lightweight, portable roadway barrier, wherein the weight of the barrier is less than 200 kg per meter of length of the barrier, wherein the barrier is a stand alone barrier in that it does not require additional mass to function as a barrier, and wherein the barrier comprises (a) a structural framework and (b) panels mounted to opposite sides of the barrier. The claims define that the purpose of the structural framework is to resist collapse of the barrier in response to impact of a vehicle. The purpose of the panels is to deflect a vehicle on impact with the barrier. The claims require that the structural framework comprises an assembly of (i) upright members at opposite ends of the barrier, (ii) at least one upright member between the end members, and (iii) at least one longitudinal member extending along the length of the barrier and connected to each of the upright members. The claims further require that the interconnected arrangement of upright and longitudinal members provides the internal structural framework with sufficient rigidity for resisting direct collapse of the barrier in the regions of vehicle impact and from uncontrolled twisting of the barrier around the longitudinal barrier axis.

Claim 1 further requires that the principal function of the side panels is to deflect a vehicle on impact of the vehicle against the barrier, and that the side panels do not make a substantial contribution to the rigidity of the barrier.

Claim 24 further requires that the longitudinal member or at least one of the longitudinal members extends along the length of the barrier and is connected at opposite ends to the upright end members and is connected to the or each upright member located between the end upright member.

In contrast, Cobb et al. discloses a barrier 12 which has upright steel panels 14, bulkhead panels 36 at spaced intervals along the length of the barrier 12 and lid panels 48. The upright steel panels 14 and the bulkhead panels 36 define filler cavities 22. Cobb et al. does not teach or suggest, among other things, that the interconnected arrangement of upright and longitudinal members provides the internal structural framework with sufficient rigidity for resisting direct collapse of the barrier in the regions of vehicle impact and from uncontrolled twisting of the barrier around the longitudinal barrier axis, as claimed in claims 1 and 24. Cobb et al. further does not teach or suggest, among other things, that no additional mass is required to function as a barrier, as claimed in claims 1 and 24.

Rather, Cobb et al. discloses that the barrier includes a "filler material". This is not required for the present invention and is a key difference between the present invention and commercially-available barriers, such as the barrier of Cobb et al. The Examiner argues in the Office action that the filler material is "a preferred option but not essential to the invention" and discounts the relevance of the references to filler material on this basis (see page 3 of the Office action). The Applicant asserts that the filler material **is** in fact essential to the device of Cobb et al. The Cobb et al. patent is a long document and a significant part of the document focuses on the filler material. Specifically, Cobb et al. discloses that stabilized filler material deforms under impact to absorb the impact energy (see col. 5, lines 14-20). Also, Cobb et al. states that "[t]he compressive strength of the stabilized filler material must be limited to provide a sufficient degree of yield under impact to absorb an adequate amount of impact energy" (col. 4, lines 5-8). The stabilized filler material is necessary for the barrier 12 of Cobb et al. to function. The steel panels 14, bulkhead panels 36 and lid panels 48 do **not** provide sufficient rigidity for resisting collapse of the barrier in response to vehicle impact. Rather, the stabilized filler material contained in the filler cavities provides the required rigidity. Further, the stabilized filler material and the mass associated therewith are required for the barrier 12 to function.

Amended claims 1 and 24 define that the interconnected arrangement of upright and longitudinal members provides the internal structural framework of the claimed barrier with sufficient rigidity for resisting direct collapse of the barrier in regions of vehicle impact and from uncontrolled twisting of the barrier around the longitudinal barrier axis. The internal structural framework of the Cobb et al. barrier, which comprises upright panels only, cannot of itself prevent direct collapse of the barrier in regions of vehicle impact and from uncontrolled twisting

of the barrier around the longitudinal barrier axis. This can only be achieved in the Cobb et al. barrier with the use of filler material as an essential part of the barrier.

The primary focus of Cobb et al. is the use of stabilized filler material in place of nonstabilized filler material to increase beam strength and thereby reduce twisting of the barrier under impact (col. 1, line 47-col. 2, line 7). Cobb et al. goes to great length to describe the benefits of a stabilized filler material in place of a nonstabilized filler material (col. 10, line 55-col. 11, line 20, col. 13, line 33-col. 15, line 34).

Cobb et al. describes the desired properties of the stabilized filler material and how the stabilized filler material allows the barrier to properly function (col. 3, line 55-col. 5, line 36). Cobb et al. conducted a first test of a roadway barrier having nonstabilized filler material and a second test of a roadway barrier having stabilized filler material (col. 15, line 35-col. 16, line 52). These tests allowed Cobb et al. to conclude that "by selecting the appropriate filler material, and stabilizing the filler material to provide an appropriate minimum shear strength and an appropriate maximum compressive strength, the roadway barrier of this invention can be designed to accommodate conventional automobiles, a desired mix of automobiles and large trucks, or can be designed to be specific for a large volume of large trucks" (col. 16, lines 53-60).

The stabilized filler material provides an increased beam strength for the barrier to enable the barrier to function properly (col. 19, lines 1-15). Additionally, the stabilized filler material puts the rear panels of the barrier (those on the opposite side of the impact area) in tension during impact. The tension in the rear panels in combination with the stabilized filler material provide an increased beam strength in comparison with a barrier having unstabilized filler (col. 19, lines 50-57). Cobb et al. further states "the stabilized filler material contributes to the beam strength of the barrier. Applicants believe, therefore, that it may be possible to reduce the thickness of the material from which the panels are made and still have a barrier with equivalent performance" (col. 19, lines 57-62).

Not only does Cobb et al. fail to teach or suggest that the filler material is optional, but Cobb et al. actually discloses that the filler material is necessary to provide a suitable resistance to impact and deformation to attenuate vehicle speed upon impact (col. 10, line 55-col. 11, line 20). It is very clear to one of ordinary skill in the art that Cobb et al. relies on the filler material to provide a properly-functioning barrier. If the filler material were omitted from the barrier of

Cobb et al., the modified barrier would fail to function as intended. Such a modification would render the device of Cobb et al. unsatisfactory for its intended purpose. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)" (*M.P.E.P.* §2143.01 (V)) There is no suggestion or motivation to make the modification to Cobb et al. proposed by the Examiner (e.g. omitting the filler material, see page 3 of the Office action).

Further, the bulkhead panels 36 do not resist collapse of the barrier in response to impact of a vehicle. Rather, "the bulkhead panels 36 have limited compression strength thereby permitting collapsing of the bulkhead panels 36 under impact thereby insuring that the panel connection means will not, after impact, present obstructions which tend to project beyond the impact deformed surfaces of the panels 14" (col. 12, lines 6-12). The bulkhead panels 36 are designed to collapse under impact so as to avoid presenting obstructions after impact. This is in direct contrast to claims 1 and 24 which require that the internal structural framework provides sufficient rigidity for resisting collapse of the barrier in response vehicle impact. The bulkhead panels 36 of Cobb et al. are designed to collapse under impact while the filler material is required to provide sufficient rigidity for resisting collapse of the barrier.

The Cobb et al. approach to barrier design is to use a filler material to contribute to the resistance of the barrier to vehicle impact. In contrast, the approach of the present application is to provide a structural framework of upright members and at least one longitudinal member, with no filler material, for this function. In other words, the present invention teaches a different approach to providing sufficient resistance to vehicle impact to that of Cobb et al. The use of mass, such as filler material in the case of Cobb et al. or water in the case of water-filled barriers or concrete in the case of "Jersey" barriers is the known approach in the industry (see paragraphs 0003-0006 of the present application). Cobb et al. is consistent with this approach. It is not obvious to one of ordinary skill in the art at the time the invention was made to move away from heavy barriers of the prior art and provide a lightweight barrier that relies on a structural framework of interconnected members that optimizes resistance to vehicle impact and uses side panels as non-structural elements that act to deflect vehicles, as claimed in claims 1 and 24.

With regard to the comments of the examiner in the Advisory Action, the term "resists collapse" is a clear term on its own and particularly in the context of claims 1 and 24 as a whole. Specifically, claims 1 and 24 recite that the barrier of the invention includes (a) a structural framework for the purpose of resisting collapse of the barrier on vehicle impact and (b) side panels having a principal function of deflecting vehicles on vehicle impact. In other words, the claims explain that the barrier includes components that are optimized for one function of the barrier, i.e. resisting collapse on vehicle impact, and other components that are optimized for a separate function of the barrier, i.e. deflecting vehicles on vehicle impact. This is not the case with the Cobb et al. barrier.

As described in paragraphs 0050-0051 of the present application, the barrier 3 underwent a standard industry test to assess barrier performance. The barrier 3 "withstood the vehicle impact with an acceptable level of lengthwise twisting of the steel barrier and only a 4 meter deflection of the barriers from the original line of the barriers" (paragraph 0051). For at least this reason, the Applicant asserts that the term "resists collapse" is adequately defined in the specification and claims to clearly define the term for one of ordinary skill in the art at the time the invention was made.

With further regard to the comments of the examiner in the Advisory Action, Applicant asserts that it is not possible to read Cobb et al. as teaching that barriers with upright members and no filler material are effective as barriers in any realistic way. Cobb et al. teaches that barriers should have filler material to be functional. Cobb et al. does not teach or suggest, among other things, the barrier of claims 1 and 24 that operates as a functional barrier with an interconnected arrangement of upright and longitudinal members to resist vehicle impact and side panels to deflect vehicles on vehicle impact, and with no filler material.

Anderson does not teach or suggest, nor does the Examiner allege that Anderson teaches or suggests each and every element of claims 1 and 24. Rather, Anderson is relied upon for the lifting ring.

Cobb et al. and Anderson, taken alone or in combination, do not teach or suggest each and every element of independent claims 1 and 24. Therefore, claims 1 and 24 are patentable over Cobb et al. and Anderson. Claims 6, 7, 9-12 and 14-23 depend from claim 1 and are

allowable for the same and other reasons not specifically mentioned herein. Reconsideration of the prior art rejections is respectfully requested.

If a conference call would be useful in resolving issues arising from the filing of this communication, please contact the undersigned at the below-noted number.

Respectfully submitted,

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